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ABSTRACT

The sex gap in language and reading was investigated. Studies which indicate that girls generally excel over boys in the language development and reading area were reviewed. Three educational levels were included in the investigation: preprimary, primary, and upper elementary. The author's study was made in the Los Angeles City Schools to determine whether boys' reading achievement would be affected by instruction in sex-segregated groups. At the end of the school year test scores indicated that girls, as a group, achieved significantly more than the boys and also showed significantly greater reading growth. Analysis of the data did not show that boys taught alone gained significantly more in achievement or in growth than boys taught in heterogeneous sex groupings. The study did, however, reveal seven basis areas of difference in the language-development patterns of boys and girls: verbal facility, listening skills, auditory discrimination, attention span, story preference, personality style and activity levels, and goals and motivations. Six years of subsequent research supported these findings. References are included. (Author/NH)

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THE SEXUAL FACTOR IN LANGUAGE DEVELOPMENT AND READING

In the past thirty years, much research has been dedicated to investigating the disparity in reading achievement between boys and girls. While some studies fail to reveal significant sex differences, the majority indicate that girls generally excel boys, particularly in the first three grades. Weintraub notes that "Various studies at readiness or beginning levels show differences or no differences between boys and girls, depending upon the skill or ability being measured."[1] While such factors as increasing maturity, instructional methods, or high-interest materials can modify the initial inequality, most of the research in language development and reading indicates that the "sex gap" exists at all levels, from kindergarten to college.

Pre-primary level

In April, 1966, a progress report for Headstart Operational Field Analysis gave results of an analysis of the relationship between sex and concept attainment among pre-school children. Melvin E. Allerband reported on studies of 191 children after two, four, five, and six months of kindergarten. Concept attainment was determined by observation within the classroom setting; the children were rated on color concept, form-space concept usage, grouping, ordering, time sequence, and time duration. Results of the analysis at the end of six months indicated that boys are more effective in visual discrimination and girls more effective in handling performance demands.[2]

One hundred-fifty-three children in a study conducted in Nebraska were tested for reading readiness before they entered kindergarten. Tests used were the "ABC Inventory," gross muscular development and coordination

RE002 929

tests, and selections from the Wechsler preschool and primary scale of intelligence. From the results, children were separated into low-readiness and high-readiness groups. Boys accounted for approximately 76% of the low-readiness group.[3]

At the University of Minnesota, Rosalyn Rubin and Bruce Balow compared pre-kindergarten and pre-first grade (second semester kindergarten) boys and girls on measures of school readiness and language development. Their report of August, 1968 listed results of testing 638 pre-kindergarten children and 570 pre-first graders. In school readiness, measured by the Metropolitan Readiness Tests, the children were tested on word meaning, listening, matching, alphabet, numbers, and copying. At the pre-kindergarten level, girls scored higher in all but word meaning. At pre-first grade level, girls scored higher in all but word meaning, with significant differences noted in matching and alphabet. Pre-first grade boys fell at the 35th percentile; pre-first grade girls at the 42nd.[4]

In studying the effect of training in perceptual-motor skills on reading readiness development, William L. Rutherford found a significant relationship between the training program and the sex factor. Seventy-six children between the ages of five and seven were compared in performance on the Metropolitan Readiness Tests after a program of playground activity in which the experimental group was given specialized training to develop perceptual-motor skills. In the control group, which engaged in routine playground activities, the girls showed greater gain than the boys in reading readiness development. However, in the experimental group, the boys outgained the girls. These findings would seem to indicate that boys require more early training in perceptual-motor skills than girls.[5]

Primary level

The sex factor was one consideration of a Florida study by Spache and others to determine the effect of an intensified and extended reading readiness program upon first grade reading achievement. Sixty-four first grade classes (racially mixed, Negro and Caucasian) were tested on visual discrimination, auditory discrimination, and language abilities. Findings, as reported in The Reading Teacher, May, 1966 disclosed that "sex differences favored girls at all levels in the white control population and tended

to favor girls at the lower levels in the experimental population. At the two upper levels of ability among white experimental pupils, sex differences appeared to be overcome or counter balanced by factors in the experimental program."[6]

Three studies published in 1966 analyzed sex differences in data comparing different approaches to reading instruction at the first grade level. Harold J. Tanyzer and Harvey Alpert investigated the effect of three different basal systems (Lippincott, Early-to-Read ITA, and Scott-Foresman) on the reading achievement of first grade children according to sex and different levels of intelligence. They found that in each of the three basal systems, girls achieved higher mean scores. Significant differences occurred on the spelling and paragraph meaning sub-tests of the Stanford Achievement Test.[7]

In May, 1966, Nita M. Wyatt reported her findings in a study which compared reading achievement of 633 first grade boys and girls, using two different experimental approaches. The first grouped children by sex as well as ability and used materials related to interests based on sex differences (boys used Houghton-Mifflin and Ginn texts while girls used Scott-Foresman). The second experimental group used linguistic materials. A multi-basal approach was used by the control group. Analysis of readiness test results revealed that girls were significantly higher on auditory discrimination and knowledge of the alphabet, while boys scored a significantly higher mean on the test measuring knowledge of word meaning. Achievement tests showed that girls were significantly higher on paragraph meaning, spelling, and word study. The researcher observed that "girls in the study seemed better equipped for reading at the beginning of the instruction period, and this advantage was retained. Reading achievement of boys seemed to depend on something other than the teaching method used after entering formal instruction."[8]

Another study comparing reading achievement in a linguistic versus basal reader approach indicated superior achievement for girls. J. Wesley Schneyer reported in 1966 on a study of 674 Pennsylvania first graders. At the conclusion of a 140-day instruction period, girls scored significantly higher than boys in the Linguistic Reading Test, the Philadelphia

Reading Test, and the sub-tests for paragraph meaning, spelling, and word study skills of the Stanford Achievement Test.[9]

Research begun in 1963 to evaluate another method of teaching reading revealed that girls' achievement was higher in the first two grades. Joseph T. Hanson studied the achievement of Pasadena, California children in grades one, two, and three using the phonovisual method supplementary to the basal readers. Children were matched in pairs of two boys or two girls of equal age and intelligence. Grade One was tested on vocabulary and comprehension; Grades Two and Three on vocabulary, comprehension, and spelling. Results showed that girls' achievement was higher than boys' with the exception of Grade Three in the experimental group.[10]

In England, Dorothy Hammond published in 1967 her findings based on identical surveys of reading attainment in 1947 and 1962. Approximately four thousand boys and four thousand girls, ages five to eight, were tested in the primary schools of Brighton; the results compared reading ages with chronological ages. In both years, girls, on the average, reached a reading age equivalent to chronological age more quickly than boys. A larger proportion of boys was found to be backward in reading. In 1962, the number of boys below average was balanced by the number above average at the age of eight, while this was true of the youngest age of the group of girls.[11]

Upper elementary level

While the preponderance of research in reading difficulties takes place at the crucial primary level, studies of older children support the evidence that boys experience more difficulty than girls in language development. During the 1940's, one of the largest research projects on sex differences in school achievement was conducted by Stroud and Lindquist in more than three hundred Iowa schools. Some fifty thousand pupils in grades three through eight were tested with the Iowa Every-Pupil Basic Skills Test on reading comprehension, vocabulary, word-study skills, basic language skills, and arithmetic skills. In all of the language development skills, the girls maintained a consistent, significant superiority over the boys.[12]

Research published in 1965 disclosed the general superiority of girls

in language arts in the upper elementary grades. At the University of Georgia, Oscar T. Jarvis made a survey of the educational status of 347 girls and 366 boys in language arts at the sixth grade level. The classification of boy-girl pupil was subdivided on the basis of intelligence in order to determine more precisely the relationship between innate abilities and proficiencies to do grade-level work. Findings, as measured by the California Short-Form Test of Mental Maturity and the California Achievement Test Battery, Form W, were studied from the point of view of the percentage of pupils working above, at, or below grade level.

In the above-grade-level group, girls were found to be superior generally to their peer group of boys in the various classifications of bright, average, and dull in every area except that of the bright boys and girls in reading vocabulary and comprehension. In reading vocabulary, boys and girls with superior intelligence achieved at comparable levels, while in comprehension, the boys did slightly better than the girls.

At grade level, there was no large percentage difference between boys and girls, except among the dull group in language mechanics; 8% more girls were working at grade level than a similar group of boys. There was a smaller percentage of girls at below grade level in all subject areas except that of the bright boys and girls in language mechanics -- none of the boys and 1% of the girls were below grade level.

As a result of Jarvis' study, it was concluded that girls at the sixth grade level tend to excel in language arts achievement.[13]

Research as high as the college level indicates that the sex factor continues to exist in performance of language skills after twelve years of school. A study by Samuel D. Aven and Marvin Chrisp at a northeastern university tested 1,341 college freshmen in English proficiency. Their research, reported in 1967, revealed that significantly more boys than girls scored below the 50th percentile.[14]

While different approaches to instruction, different reading materials, and different teacher attitudes, each or all, may favorably affect boys' language development, the fact remains that girls achieve better than boys and that sex differences in language development and reading achievement vary, depending upon the skill or ability tested.

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The writer's research with sex-segrated reading groups revealed definite differences in the language development of boys and girls. The study was made in the Los Angeles City Schools to determine whether boys' reading achievement would be affected by instruction in sex-segregated groups. Approximately 550 first graders -- black, Mexican-American, and white -- were taught beginning reading with a grouping procedure consisting of all boys, all girls, and mixed boy-girl groups. At the end of the school year, test scores indicated that girls, as a group, achieved significantly more than the boys and also showed significantly greater reading growth. Analysis of the data did not show that boys taught alone gained significantly more in achievement or in growth than boys taught in heterogeneous sex groupings. The study did, however, reveal seven basic areas of difference in the language-development patterns of boys and girls. Six years of subsequent research supported these findings.

Verbal Facility

Boys were found to be verbally less adequate than girls. When speaking they had greater difficulty in articulation, enunciation, and pronunciation. In contrast to the verbal fluency of the girls, the boys spoke in incomplete and fragmentary sentences. Boys participated less in class and did so primarily when interested in a particular subject. This motivational factor, presumably, is responsible for the fact that, although boys are less articulate than girls, they tend to compensate by developing enriched vocabularies in areas in which they are interested. In his doctoral study, Howard B. Anderson found that "first grade children master oral vocabularies that reach out into state, national, and world events. This vocabulary includes many words of a scientific nature that would be appealing to boys."[15]

In subsequent research by the writer, special materials were developed to help boys overcome the observed difficulties in oral language skills. Flannel board stories with attractive cut-outs were used to develop specific speech sounds and to encourage verbalization. Story-telling and dramatization became a regular part of the daily program. Puppets -- simple paper-bag, stocking, and stick types -- were also used to free children from tension, to allow identification with a story character, and thus to promote involvement in oral language activities. Also effective were study

prints which presented high-interest situations and stimulated children to think and discuss. Children were encouraged to talk and answer questions about inferences, cause-and-effect relationships, comparisons, predictions, sequence, and main ideas. Some of the study prints introduced the characters of the readers. These not only provided an incentive for telling stories, but also created interest in the new books and developed an oral vocabulary in preparation for reading.

Listening Skills

That listening patterns continue to reflect sex differences as children mature is suggested by a Texas study on listening reported in October, 1966. Clotilda Winter, in research with 563 boys and girls in the upper elementary grades, correlated results of the STEP Listening Comprehension Test with the S.R.A. Achievement Test and the California Test of Mental Maturity. In analysis of results, the mean for the girls was slightly higher than that for the boys.[16]

In the writer's research, boys were observed to be poor in listening as well as verbalizing. Their performance in this area was also dependent upon their interest in the subject. It was noted that boys tended to listen more intently when the material being presented had multi-sensory appeal. The writer found that boys respond enthusiastically to such instructional aids as recordings of the sounds of airplanes, trucks, trains, etc., taped stories and poems, and directional games such as "Simon Says." Individual flannel boards, pocket charts, chalkboards, and acetate slates were highly successful in promoting listening skills in situations in which the children followed steps in a teacher-directed activity.

In the areas of both verbal facility and listening skills, sex differences seem to be influenced by cultural factors. Dorothea A. McCarthy suggests that girls' early language superiority results partly from earlier physical maturity and partly from social interests which stimulate language development to a greater degree than the boys' interests, which center around physical activity.[17] Further support for cultural explanation of these differences has been reported by Paul S. Anderson who observed that in Japan, where male children are given preferential attention in both home and school, the language development of boys is more advanced than that of girls.[18]

Auditory Discrimination

Boys' lack of verbal facility and their inadequate listening skills can be considered contributory factors in another area of difference in language patterns. It was observed that boys had much greater difficulty than girls in making auditory discriminations and in hearing common phonetic elements. Girls learned to recognize sounds in one-half to one-third the time it took boys to identify the same sounds. These observations are supported by Wyatt's study in which girls' reading readiness scores in auditory discrimination were significantly higher than boys.[8]

In the writer's research studies, the development of auditory discrimination skills was stimulated effectively by the use of "Phoneme Boxes," which contained small objects representing the initial consonant sounds to be studied. Children handled the objects, repeated the names, and learned the letter which corresponded to the initial sound. For example, the "D" box contained such objects as a dog, doll, duck, dish, donkey, etc. Phonograms were also taught with similar boxes containing rhyming objects, such as a toy car and a wooden star; a small bell and a sea shell; a little wooden house and a toy rubber mouse. After initially teaching sounds with tangible objects, the children progressed in development of sound-symbol relationships with pictures which represented the different sounds. Rhymes, riddles, and stories which related to the pre-primers were also used successfully.

Attention Span

The attention span of the boys, in general, was found by the research teachers to be shorter than that of the girls. From observation of children in the study, the attention span of boys varied between twelve and fifteen minutes, while the girls could attend for twenty to twenty-five minutes. However, the boys' ability to pay attention seemed to depend upon the activity. Teacher-observers noted that "boys can pay attention for a long time if they're doing something active and dynamic, either mental or physical." It is, therefore, not surprising that boys' attention lags in classrooms which traditionally are feministically oriented. This viewpoint was expressed by Dolores Durkin who states that "everything about the typical primary reading program is much more feminine than mas-

culine." She urges teachers to stimulate boys' interest with stories about dinosaurs, cowboys, and sports heroes, and with attention-getting bulletin boards featuring pictures of sports, nearby building projects and the like.[19]

Story Preference

The area of attention is closely related with that of story preference or subject-matter interests. In the all-boy reading groups of the study, teachers found it difficult to interest boys in subjects that did not have the appeal of the unusual and the dynamic. The teachers' ingenuity was constantly being challenged to provide material with action and excitement. Teachers of the all-girl groups had no problem holding the interest of their pupils in a variety of subjects. This view has been supported by the interest studies of Lazar, Terman and Lima, Rankin, Thorndike, Norvell, and Stanchfield. These studies have shown that boys have special interests and do not like the so-called "girlish" books, whereas girls like the boys' preferences as well as their own special books.

The writer found, in research about boys' reading preferences, that among the kinds of stories most liked by boys were those featuring exploration and expeditions, outdoor life, sports and games, science fiction, sea adventure, and fantasy. Least liked categories include stories about music and art, family and home life as well as plays and poetry.

Personality Style and Activity Levels

Sex differences in personality and activity levels were found to have bearing on the language development of boys and girls. Boys were found to be more agressive and less conforming than girls in the classroom situation. Their vigorous physical drive and their lower frustration level for boredom created discipline problems. These so-called "negative" behavioral responses were very evident to teachers of sex-segregated reading groups and their implications were considered in planning and developing a better learning environment for boys. It was concluded that language skills must be taught in varied and exciting ways to capture and hold the imagination of boys, with much behavioral involvement. Specific physical responses were encouraged with the use of individual chalkboards, acetate slates, pocket charts, and flannel boards. Colored marking pens were also found to be an excellent motivating device.

Another area of observed personality difference was that of the ability to adapt easily and quickly to new situations. Teachers referred to this behavior as part of an "adaptive syndrome." Boys had more difficulty than girls in adjusting to new situations and in coping with changes in the learning process. Because of this difference, it was felt that boys might find security in reading stories in a series, with characters that were known and enjoyed.

Goals and Motivations

Study of children in all-boy and all-girl groups revealed and emphasized the relationship between achievement in language development skills and motivation for learning. Girls in the research were eager to please the teacher and were more quickly motivated by praise to work hard and do their best at a given task. Generally, the boys were less anxious to please, less motivated to develop good work habits, less desirous of assuming responsibility, and less self-motivated in learning to read. It was noted, however, that boys could be more enthusiastic, more curious, and more tenacious than girls in trying to solve a problem or learn something in which they were interested. In the terminology of Riesman,[20] teachers stated that boys tended to be more "inner-directed" than "other-directed." They were more concerned with learning to read to find out something they wanted to know or to do something which interested them.

The writer's studies and the research of other investigators in the area of language development have indicated significant differences between boys and girls in learning patterns and achievement. It is apparent that boys need more motivation, help, and specialized attention in this area of the learning process. Knowledge of the language development patterns of boys can provide teachers with insight into their learning problems and can suggest the necessary attitudes and instructional approaches that will enable boys to master language skills with enjoyment and satisfaction. The skill, the effort, and the concern required present a mountainous challenge, but the teacher's reward is the gift of literacy to her students -- the "bequest of wings" bestowed upon her pupils.

As expressed by Emily Dickinson . . .

He ate and drank the precious words,
His spirit grew robust;

He knew no more that he was poor,
Nor that his frame was dust.

He danced along the dingy ways,
And this bequest of wings
Was but a book. What liberty
A loosened spirit brings.

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